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(71) Applicant: ASM Technology Singapore Pte Ltd.
Singapore 768924 (SG)

(72) Inventor: Ng, Hon Yu Peter
Singapore 589627 (SG)

(74) Representative: Griebeling, Onno
Octrooibureau Griebeling BV,
Sportweg 10
5037 AC Tilburg (NL)

(54) Linear actuator comprising velocity sensor

(57) A linear actuator for a motion system is provided with a velocity sensor for monitoring a velocity of an actuation arm that it is driving. The linear actuator comprises a magnetic field, a first coil that is controllably movable within the magnetic field by adjusting a current flowing through the first coil whereby to drive the actuation arm and a second coil that is movable with the first coil and configured such that a voltage is inducible in the second

coil that is proportional to its velocity. A controller device is connected to the second coil for receiving feedback indicating the voltage induced in the second coil whereby a velocity of the actuation arm is determinable, wherein the controller device is further connected to the first coil and is operative to adjust the current flowing in the first coil based upon said feedback for controllably driving the actuation arm.

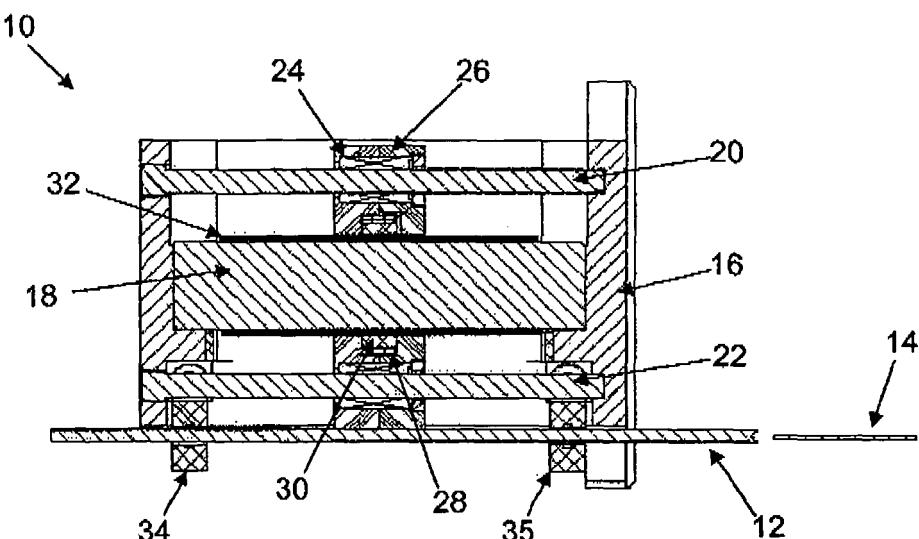


FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 06 07 5675

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	EP 1 422 731 A1 (MAQUET CRITICAL CARE AB [SE]) 26 May 2004 (2004-05-26) * abstract * * paragraphs [0017], [0019] * * claims 1-3 * * figures 1-2 * -----	1-15	INV. H02K41/02 G01P3/52 H01F7/06
A	WO 01/73927 A2 (BEI TECHNOLOGIES INC [US]) 4 October 2001 (2001-10-04) * page 3, lines 20-23 * * page 4, line 13 - line 15 * * page 4, line 25 - line 29 * -----	6-10	
A	US 4 792 707 A (KATANUMA YASUSHI [JP]) 20 December 1988 (1988-12-20) * abstract * * column 2, line 24 - line 41 * * column 3, line 10 - line 14 * * claim 1 * -----	1-4	
A	US 5 197 104 A (PADI GYULA [US]) 23 March 1993 (1993-03-23) * claims 1b, 1c * -----	1-5	TECHNICAL FIELDS SEARCHED (IPC) H02K H01F G01P H04R
The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 11 February 2011	Examiner Langen, Erik
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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ON EUROPEAN PATENT APPLICATION NO.

EP 06 07 5675

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11-02-2011

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1422731	A1	26-05-2004	JP US	2004173493 A 2004095128 A1		17-06-2004 20-05-2004
WO 0173927	A2	04-10-2001	AT CN EP JP	431007 T 1419732 A 1269612 A2 2004515994 T		15-05-2009 21-05-2003 02-01-2003 27-05-2004
US 4792707	A	20-12-1988	JP	63048149 A		29-02-1988
US 5197104	A	23-03-1993		NONE		